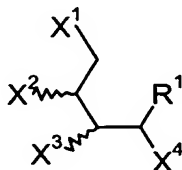


We claim:-

1. A process for removing horny substances from animal hides, wherein animal hides are treated in aqueous liquor comprising from 0.05 to 5% by weight, based on the salted weight, of one or more compounds of the formula I



or the corresponding alkali metal or alkaline earth metal or ammonium or phosphonium salts thereof, the variables being defined as follows:

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R<sup>1</sup> is selected from hydrogen and C<sub>1</sub>-C<sub>12</sub>-alkyl, unsubstituted or substituted by one or more S-H or O-H groups;

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X<sup>1</sup> to X<sup>4</sup> are identical or different and are selected from hydrogen, C<sub>1</sub>-C<sub>4</sub>-alkyl, O-H, S-H and N-HR<sup>2</sup>,

R<sup>2</sup> is hydrogen or C<sub>1</sub>-C<sub>12</sub>-alkyl or a C<sub>1</sub>-C<sub>4</sub>-alkyl-C=O group,

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at least one of the radicals X<sup>1</sup> to X<sup>4</sup> being S-H,

and, if R<sup>1</sup> contains neither O-H nor S-H, at least one further radical from among X<sup>1</sup> to X<sup>4</sup> is selected from S-H, OH and NH-R<sup>2</sup>,

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and furthermore comprising at least one compound which catalyzes the hydrolysis of peptide bonds.

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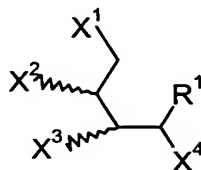
2. A process as claimed in claim 1, wherein the treatment of 100 parts by weight green weight of a South German bovine with 1% by weight of a proteolytic enzyme preparation containing 1000 LVU/g, 0.5% by weight racemic dithiothreitol and 1.2% by weight NaOH in the form of a 50% by weight solution which is added in three portions in a rotatable 10 l drum with flow-disrupting internals, percent by weight being based in each case on green weight, is excluded.

3. A process as claimed in claim 1 or 2, wherein at least one compound which catalyzes the hydrolysis of peptide bonds is an organic compound.
- 5 4. A process as claimed in any of claims 1 to 3, wherein at least one compound which catalyzes the hydrolysis of peptide bonds is an enzyme.
5. A process as claimed in any of claims 1 to 3, wherein the enzyme is a protease or a peptidase.
- 10 6. A process as claimed in any of claims 1 to 5, wherein the Löhlein and Volhard activity of the compounds which catalyzes or catalyze the hydrolysis of peptide bonds is from 500 to 2 000 000 LVU/kg salted weight.
- 15 7. A process as claimed in any of claims 1 to 6, wherein  $R^1$  is chosen to be H,  $X^1$  and  $X^4$  to be S-H and  $X^2$  and  $X^3$  to be O-H.
- 20 8. A process as claimed in any of claims 1 to 7, wherein the amount of compound which catalyzes the hydrolysis of peptide bonds is chosen to be a factor of at least 10 smaller than the amount of compound I.
- 25 9. A process as claimed in any of claims 1 to 8, which is carried out in the presence of urea.
10. A pelt produced by a process as claimed in any of claims 1 to 9.
- 25 11. A residual liquor obtainable by a process as claimed in any of claims 1 to 10, comprising melanin and degradation products of melanin.
- 30 12. A process for working up a residual liquor as claimed in claim 11, wherein, in an optional step, said liquor is separated from lime and then neutralized with acid and proteins are then separated off.
13. The use of neutralized residual liquors freed from protein, as claimed in claim 12, for soaking raw hides.

# Removing horny substances from animal hides

## Abstract

- 5 Horny substances are removed from animal hides by a process wherein animal hides are treated in a liquor comprising from 0.05 to 5% by weight, based on the salted weight, of one or more compounds of the formula I



I

- 10 or the corresponding alkali metal or alkaline earth metal or ammonium or phosphonium salts thereof, the variables being defined as follows:

$\text{R}^1$  is selected from hydrogen and  $\text{C}_1\text{-C}_{12}$ -alkyl, unsubstituted or substituted by one or more S-H or O-H groups;

- 15  $\text{X}^1$  to  $\text{X}^4$  are identical or different and are selected from hydrogen,  $\text{C}_1\text{-C}_4$ -alkyl, O-H, S-H and  $\text{N-HR}^2$ ,

$\text{R}^2$  is hydrogen or  $\text{C}_1\text{-C}_{12}$ -alkyl or a  $\text{C}_1\text{-C}_4$ -alkyl-C=O group,

- 20 at least one of the radicals  $\text{X}^1$  to  $\text{X}^4$  being S-H,

and, if  $\text{R}^1$  contains neither O-H nor S-H, at least one further radical from among  $\text{X}^1$  to  $\text{X}^4$  is selected from S-H, OH and  $\text{NH-R}^2$ ,

- 25 and furthermore with at least one compound which catalyzes the hydrolysis of peptide bonds.